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When we consider the amount of energy and money and time and human intelligence that has been exerted to provide the superficial appurtenances of civilization; how we have girdled the earth with wireless telegraphy and the telephone; our undersea and overhead activities; and all the marvelous developments that science has provided for amusement, for dissipation, for money-getting, for warfare, for destroying human life—it is rather pitiful to think of our helpless condition as we face the average man of to-day and his physical equipment.

The condition of the average individual as a structure is a lamentable contrast, for example, to the magnificent condition of this skyscraper in which we are holding this meeting—the one perfect in all its details, a splendid monument to human business and artistic genius; the other a reproach upon our civilization in its condition of physical inadequacy, of infection, of faulty development, of maladjustment to environment.

If this maladjustment were necessary, it would be well to make the best of it and not talk so much about it; but, fortunately, it is to a very large degree preventable and positively not to be accepted as necessary.

This picture I have drawn of the bodily condition of the civilized American may not be impressively optimistic, but it happens to be true; and this is a time when, with optimism as our background, we must place the bald facts in the foreground if we are to have effective action directed to safeguarding our country. With the leading nations of the world in a death grapple we can not stand idly by as children viewing a tragic film play, and trust to luck for everything to come out right. Action is needed. The insurance companies can mobilize for physical preparedness among the people. Will they do it?

## LIFE INSURANCE AND THE WAR

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LIFE insurance serves two great purposes—protecting the home against the untimely loss of the income-producer, and inculcating the spirit of thrift by rendering easy and systematic the saving of small sums over a long period of time into a substantial amount for protection against dependency in time of need or old age. War, on the contrary, is instrumental not only in destroying many breadwinners in the prime of life, but, by wasting and depreciating the savings referred to, hampers and weakens the great institution of life insurance in the proper fulfillment of its noble mission.

In discussing the effects of the present war upon life insurance, only passing mention need be made of American companies. Business in the United States is to-day admittedly on a war basis, and what has

proved to be a source of misfortune to other leading nations in a business way has been the cause of unprecedented prosperity for us. This prosperity, with its great increase of employment and wages, its enlargement of production, and its abundance of credit at remarkably low rates, has been reflected favorably in the record of American life-insurance companies. The volume of business in the regular companies increased during the year 1915 by over \$1,250,000,000; the payment for surrendered policies shows only a normal increase; while loans on policies were the smallest since 1909, the increase amounting to only about one half that recorded for the years 1914 and 1913. Considerable interest has also been manifested concerning the effect of the war on the policies of various American companies issued in Europe prior to the beginning of hostilities, and at the ordinary rates of premium. Yet, judging from Mr. John S. Thompson's excellent paper on "The Recent European War Experience of the Mutual Life Insurance Company of New York,"<sup>1</sup> the mortality under such policies has been but little in excess of the mortality experience during peace times and amounts to but a trifle of the total claims paid on all domestic and foreign business combined. During approximately the first year of hostilities the war losses of the Mutual Life Insurance Company amounted to but .196 per cent. of the \$202,990,000 of business in force on July 1, 1914, in the belligerent nations of Great Britain and her colonies, France, Belgium, Italy, Germany and Austro-Hungary.

In discussing the immediate effects of the present deadly conflict upon life insurance, we are concerned primarily with the situation as it presents itself in the leading belligerent nations. When invited to discuss this subject, I was reluctant to accept because of the limited and fragmentary character of the information at hand, and also because the extremely deadly nature of the present war makes the use of records established in previous wars dangerous, if not useless for purposes of comparison. In view of these circumstances, the thoughts presented in this paper are not meant to be final in any sense. They can not be. They are tentative suggestions relating to present and future problems growing out of the war, and are offered with the hope that they may be kept in mind for detailed study when the war is ended and full facts shall be available. For purposes of convenience, this paper is presented under four main headings, (1) the financial effects of the war as exhibited by depreciation in security values, increased taxation, increased lapses and policy loans, and decreased volume of new business; (2) the extent and effect of war claims, and the mortality among civilians in the belligerent nations; (3) the use of policy restrictions upon military and naval service; and (4) the after-war effects on those who serve in the armies.

<sup>1</sup> *Transactions of the Actuarial Society of America*, Vol. XVI., Part II., pp. 297-314.

## FINANCIAL EFFECTS OF THE WAR

Probably the most serious immediate effect of the war upon life offices abroad was the depreciation in the value of their securities, occasioned chiefly by the fact that new high interest-bearing government bond issues set up a new standard of interest rates which operated adversely to existing low interest-bearing bond issues held by the companies. Since all the belligerent governments have been obliged to bid for funds at greatly increased rates, it may be assumed that the problem of depreciation in security values is common to all the belligerent countries of Europe. Unfortunately, it is not possible to estimate this depreciation even in England. Many offices revalue their assets only every five years, thus making it difficult to separate the effect of depreciation prior to the war from that occurring subsequently. Most of the official returns, moreover, supply no detailed information concerning the securities owned, as is done in the United States and Canada; and there is, furthermore, a lack of uniformity in the basis of valuation adopted for different types of securities.

The importance of this depreciation from the standpoint of English offices is exemplified by the facts presented for the Prudential Assurance Company (with total assets of £94,777,842 at the close of 1915) at its last annual meeting by Mr. Thomas C. Dewey, the chairman of directors. According to his statement:

The issue of a 4½ per cent. war loan in July, 1915, followed by the sale of 5 per cent. Exchequer bonds, altered the whole standard of interest rates. The result was a further depreciation in the market value of all interest-bearing securities, and, although this depreciation has to some extent been disguised by the retention on the Stock Exchange of minimum prices, yet it would be idle to ignore its existence.

Accordingly, he explains, since the beginning of hostilities the company has adopted the policy of "carrying substantial amounts of investment reserve funds rather than further writing down the value of its securities." To the beginning of March, 1916, £2,600,000 was thus added to the investment reserve fund. In addition £700,000 was carried to a special contingency fund in the Ordinary Branch to meet any emergency which might arise. In all £4,100,000 was added to reserve funds of various kinds to meet the special conditions imposed by the war. And it should be remembered that during the six years preceding the war, this large and representative company wrote down its securities by over £5,000,000.

In viewing the above situation, however, a hopeful view of the future is still taken, because life-insurance companies are seldom obliged to sell securities since their premium and interest income nearly always exceeds the current requirements for claims and expenses, because loans of various kinds are constantly being paid off, thus furnishing a constant supply of funds for fresh investments yielding a higher rate of interest, and because of confidence in the ultimate recovery of the securities which

have been written down, it is believed, only temporarily. To again quote Mr. Dewey:

So long as the interest is duly paid, so long as we have good reason to believe the capital will be paid, and so long as we do not have to realize, we maintain that such securities are quite as valuable assets of the company as they were at the date of purchase.

Some British offices, it may be stated, have partially compensated for the depreciation in their assets by adopting a higher future rate of interest for valuing their liabilities than had been used at the previous valuation, while others have, owing to the serious inroads into surpluses, reduced or omitted entirely their rates of dividend or bonus distribution.

Against the loss from depreciation, the only direct gain is the increase in interest that is being realized, and the likelihood that interest rates are apt to continue high for some time to come. But this factor is counteracted by the great increase in the income tax for what is likely to be a long period. In the United Kingdom the tax has now reached 5s. in the £ for life offices, and is assessed upon their interest from investments, after deducting the expenses of management, and not upon profits. The extent of the burden is indicated by Mr. Dewey for the Prudential Assurance Company when he stated at the last annual meeting:

The war has had the effect of decreasing all three main sources of profit—favorable mortality, interest earned in excess of the rate assumed in the valuation, and saving in expenses. . . . The rate of interest earned in 1915, after deduction of income tax, was £3 19s. 6d., as against £4 3s. 10d. in 1914. The reduction is almost entirely due to the increased income tax to which we have been subjected.

Another very noticeable result of the war has been the heavy investment by life offices in all the belligerent countries in war loans. Not only have the new funds of the companies, accumulated from day to day, been invested in this manner, but also a substantial part of their old funds which had previously been invested in American and other securities and which could be liquidated abroad and reinvested at home to greater advantage in high interest-bearing war bonds. The total extent of such investments can not yet be ascertained, owing to the absence of official reports. But that the movement has reached large proportions in all the leading belligerent nations is beyond question.<sup>2</sup> It has been stated, for example, that life insurance organizations in Germany with assets of \$750,000,000 in 1913, had, by the beginning of 1916, subscribed \$120,000,000 to the German war loans. An analysis of the annual reports of six important British offices shows that their holdings

<sup>2</sup> Mr. S. G. Warner, president of the Institute of Actuaries, at a meeting of the institute in London, November 27, 1916, estimated that "since the beginning of the war British life offices have invested in British government securities of various kinds upwards of £75,000,000. They have sold or lent to the Treasury, under its schemes *A* and *B*, securities of the face value of over £46,000,000."

of British government securities increased between December 31, 1914, and December 31, 1915, from £1,618,599 to £16,049,727, an increase of 892 per cent. At the close of 1914 the total assets of these six companies amounted to £119,941,781 and British government securities represented only 1.3 per cent. By the close of 1915 the total assets of these companies aggregated £124,396,876 and the holdings of British government securities (£16,049,727) had risen to 12.9 per cent. If this showing averages approximately the same for all the offices in the United Kingdom, life insurance has truly proved a great financial aid to the prosecution of the war. One of the six companies referred to, with total assets of £6,503,916, increased its holdings of British government securities during 1915 by 1,548 per cent., and the same amounted to 17.5 per cent. of its total assets. The Prudential's holdings amounted to £13,247,432, or 18.6 per cent. of the total assets assigned to its industrial department plus 9.8 per cent. of the assets assigned to its ordinary department. At the close of 1914 the two percentages stood, respectively, at only 2.9 per cent. and .3 per cent. As a matter of further interest it may be stated that during the year the Prudential took advantage of the fluctuating rates of exchange and sold to neutral countries £1,200,000 of their own securities, this action, in the words of its chairman, "being not only of advantage to the company, but of assistance to national interests, as it brought back capital from abroad for investment in our own country." Of course, all published accounts manifest the utmost confidence in these prodigious investments in government securities, since the investment rate is high and the safety of the principal assumed to be unquestioned. Let us hope, for the sake of life insurance in all the belligerent nations, that the prolongation of the war and the continued drain upon national resources will not be such as to prove this confidence to have been misplaced.

At the outbreak of the war widespread fear was entertained that unemployment on a large scale would lead to a great number of lapses. In fact, legislation relating to industrial policies was enacted in England (The Courts (Emergency Powers) Act) to the effect that certain classes of industrial policyholders might, during an indefinite period, suspend the payment of premiums and at the same time retain the benefit of their insurance. This emergency legislation was enacted in the expectation that large classes of the industrial population would, as a result of the war, find their occupations gone or their incomes greatly reduced. Such fears, however, proved entirely unfounded, since in England the working classes, owing to the industrial demands of the war, have enjoyed constant work at high rates of pay. I am also advised that in Germany the situation is not nearly so bad as originally expected, that the premium income of the companies has been quite regular, and that the lapse ratio has not been unusual. In all probability some importance should be attached to the mental effect which the

great world calamity has had upon the careless in influencing them to continue their policies in the interest of preparedness against death.

Detailed information concerning the lapse ratio is again obtainable only for English companies. In the case of 35 British offices<sup>3</sup> the total amount paid by the companies during 1915 was only £2,166,000, against £2,247,000 in 1914 (a decrease of over 3 per cent.) and against £1,955,700 in 1910, an increase of only 10.7 per cent. The 1916 ratio to life and annuity funds was only 0.6 per cent. as compared with 0.7 per cent. for the years 1914 and 1910 and an average of about 2.3 per cent. for American companies. In the industrial business of these companies the sum paid during 1915 was less than in 1914 by over 15 per cent.

Another fear at the outbreak of hostilities was the likelihood of policyholders resorting to a wholesale utilization of the borrowing capacity of their policies. In anticipation of this contingency and to forestall the expected rush, many British offices announced higher rates of interest for new loans, and in some cases rates on existing loans were also increased. But, as in the case of surrenders, this misgiving was entirely unwarranted, and for the same reasons. For 28 British offices<sup>4</sup> the amount of policy loans outstanding at the end of 1915 showed a slight decrease as compared with the close of 1914, the ratio to life and annuity funds decreasing from 7.7 to 7.6 per cent. These ratios are but slightly higher than the 7.2 per cent. recorded in 1910-11, and compare very favorably with the ratio prevailing in the United States. In Continental Europe, judging from the limited data at hand, the situation was not so favorable. My information is to the effect that in Germany, at the outbreak of the war, the procurement of money to meet the big demand for policy loans constituted a real problem and that for this purpose a "Bank of German Life Insurance Companies" was created which loaned money on securities.

But while, in view of the circumstances, the lapse and policy loan ratios did not prove unfavorable, this can not be said concerning the volume of new business written. This is as might be expected, owing to the call to the colors of some millions of fit men who otherwise would have constituted a fertile field for new insurance; to the inability of the companies to undertake the war risk without charging almost prohibitive premiums; and to the absorption into the ranks of the army of a large proportion of the companies' agency forces. To some extent, too, the poor dividend results shown since the outbreak of the war may possibly have proved an adverse factor. According to English insurance journals, French life offices are generally reporting greatly reduced new business returns, partly because the enemy is in possession of the great industrial districts of the north and partly because the majority of the district managers and agents of the companies have been called

<sup>3</sup> For detailed summary see the *Economist*, September 16, 1916.

<sup>4</sup> For detailed summary see the *Economist*, September 2, 1916.

to the colors. The last factor must also be an important one in Germany. In England the volume of new business for the year 1915, written by 14 companies<sup>5</sup> within the United Kingdom, shows a decline of 8.5 per cent. as compared with the preceding year. Seven of these companies wrote business outside of the United Kingdom, and the volume of such business shows a decline of 37.5 per cent. Our list includes two industrial companies—The Prudential and Refuge—and it is interesting to note that, despite the difficulties enumerated, their new ordinary business for 1915 exceeded that of 1914 by over 5 per cent., while their industrial business remained practically the same. If, however, the industrial business be omitted, the total new ordinary business of the 14 offices referred to shows a reduction of approximately 20 per cent. as compared with 1914.

#### EXTENT OF WAR CLAIMS

But while the financial effects of the war in their relation to life insurance have been serious, our thoughts naturally turn to the extent of war claims paid. The deadly nature of the present war is indicated by the data relating to deaths reported up to July 31, 1915 (and covering over 11 months of actual hostilities) among 11,819 officers serving in British regiments of the regular army at the commencement of hostilities, which was submitted by Mr. D. H. Gordon-Smith to the Insurance Institute of Yorkshire. In the infantry branch the loss ratio reached the unusual figure of 18.3 per cent.; in all the combatant branches it reached 13.2 per cent.; while for all services it averaged 11.9 per cent. These figures contrast unfavorably with the rate of mortality in the British army during the South African War of only 5.3 per cent. per annum among officers and 3.8 per cent. among non-commissioned officers and men.<sup>6</sup> Mr. Gordon-Smith's figures, however, do not include officers missing or unofficially reported killed or dead, and many of these probably were numbered later among the dead. In his excellent paper on "The European War Risk with Particular Reference to the Practise and Experience of Canadian Companies," Mr. Arthur B. Wood concludes, although obliged to make many assumptions in reaching his conclusions, that the death rate during the first 11 months of hostilities for officers among the first division of Canada's expeditionary forces was 16.0 per cent., for other ranks 11.4 per cent., and for all combined 11.5 per cent.<sup>7</sup> These figures are indeed impressive, especially when it is borne in mind that the deadliest campaigning of the war probably occurred subsequent to the period referred to.

<sup>5</sup> For detailed statement see the *Economist*, July 8, 1916.

<sup>6</sup> This data is summarized in Arthur B. Wood's paper on "The European War Risk with Particular Reference to the Practise and Experience of Canadian Companies," *Transactions of the Actuarial Society of America*, Vol. XVII., Part I., p. 57.

<sup>7</sup> Wood, p. 59.

Since permits for military and naval service were not generally required under policies issued by English and Canadian companies prior to August, 1914, it is most difficult to ascertain even approximately the amount of insurance at risk on the lives of those who enlisted. While the rate of war mortality based upon insurance exposure is an all-important subject for study, no conclusive data along this line has yet become available. Various statements, however, showing the effect of war claims upon mortality as a whole have been made. Mr. Wood presents an interesting table showing "the percentages which the net death losses (sums issued less reserve thereon) during the year ending December 31, 1915, were of the expected by the O<sup>m(5)</sup> Table" for eight Canadian companies. Summarizing his table, Mr. Wood concludes that:

The total mortality including war claims is seen to have been remarkably favorable in every instance, the ratio of actual to expected ranging from 42.6 per cent. to 72.9 per cent., while for the eight companies combined it was 58.4 per cent. The net loss on the war claims for the combined companies was 13.3 per cent. of the expected claims. The gross war claims for nine companies combined were .134 per cent. of the mean Canadian business in force. . . . The gross Canadian claims incurred by the 9 companies were \$5,834,822, of which \$900,869, or 15.2 per cent., were due to the war. The war claims reported by the Canadian companies include deaths from all causes among combatants and also deaths among non-combatants through acts of war, such as the sinking of the *Lusitania* and other vessels.<sup>8</sup>

Some idea of what war claims have cost the English companies may be obtained from the instructive table published by the *Economist* under date of August 12, 1916, giving the war mortality claims for 52 British companies for the years 1914 and 1915. It should be noted, however, that in the case of 7 companies the last year covered by the report ends somewhere within 1915, while in six instances the last year reported runs into 1916. Total war claims paid by the above offices for the first 17 months of the war amounted to £4,313,300. In 1915 such claims totaled £3,042,500, or 11.6 per cent. of the total death claims. In 1914 war claims totaled £1,270,800, or 5.5 per cent. of the aggregate claims for the year, and 13.2 per cent. when based on the five months' duration of the war during that year.

A further analysis of the table shows that the experience of different companies varies considerably. In 6 instances war claims amount to 5 per cent. or less of the total death claims; in 16 cases over 5 per cent. and less than 10 per cent.; in 14 over 10 per cent. and less than 15 per cent.; in 6 between 15 per cent. and 20 per cent.; in 6 between 20 and 25 per cent.; and in 4 over 25 per cent. Of the last four companies, three experienced, respectively, the very high ratios of 28.3 per cent., 34.8 per cent. and 44.6 per cent. But with these relatively few exceptions it may be said that English companies have not thus far found war risks a greater burden than anticipated, and up to the end of 1915 few companies are said to have reported a mortality in excess of that pro-

<sup>8</sup> Wood, pp. 55-56.

vided for under the standard table in use. Moreover, new policies issued to soldiers and sailors have carried heavy additional premiums, and the companies have, as a consequence, had the benefit of considerable extra revenue in respect to the war risk assumed. Regular life-insurance companies have also been affected less than might be expected because the great majority of those on the firing line are young men who either carry no insurance at all or who, when insured under regular policies, carry, on the average, only a moderate amount of protection. The war losses paid, however, by English companies have reached such proportions that all published accounts seem to recognize the seriousness of the decision by the companies at the commencement of hostilities to charge no extra premium to existing policyholders who should enlist in active military or naval service.

Since by far the largest number of men at the front belong to the classes normally covered under so-called industrial policies, it follows that the industrial companies in England have had to pay a very large number of claims. But here the redeeming feature from the standpoint of the companies is that the average individual payment is small, only about £18. By April, 1916, 7 English industrial companies had reported 61,005 war claims aggregating a total of £1,135,046. Of these, one company—the Prudential—paid 38,479 claims aggregating £830,614. For the year 1915 the war claims of this huge company, whose policyholders are representative of the whole of the United Kingdom, constituted 11.4 per cent. of the total death claims. This percentage should be compared with Mr. Wood's estimate of 11.5 per cent. as the combined death rate for all ranks in the first division of Canada's expeditionary forces during the first eleven months of hostilities, and with 11.6 per cent. representing the combined ratio of war claims to total claims during 1915 for all the 52 companies already referred to.

Little direct information is at hand to indicate the war claim experience of life-insurance companies in Germany, France and Austro-Hungary. In these countries, however, the companies have generally seen fit in the past to protect themselves by incorporating a war clause in all their contracts to the effect that, unless an extra premium is paid for a permit to engage in naval or military service, the company will pay only the reserve value on policies in case of death during the period of such service. The war risk of these companies is thus greatly minimized. Again, the war risk is confined largely to the younger men, many of whom are not insured at all with companies, and who, as a class, only infrequently carry large policies. The older men, who are naturally the most heavily insured, are not exposed to the hazard of the younger men on the firing line, since they are, although in the active service of the army, engaged in policing railroads and towns, looking after the shipment of rations and munitions and in similar less hazardous duties; and the mortality among them is probably not far different from that pre-

vailing in normal times. Moreover, the four scourges of past wars—typhoid, typhus, cholera and lockjaw—have, according to medical experts recently returned from the front, been practically wiped out in the French and German armies. Evidence, gathered through correspondence and interviews with those familiar with the situation, also shows that the mortality among the civilian population of Germany, despite an increased death rate from industrial accidents attributable to the speeding up of war industries, and the wholesale rearrangement of the working personnel, has been considerably lower than the average during years of peace, a situation probably traceable to a more restricted diet, more efficient and universal care, reduced use of alcoholic beverages, and much more constant and compulsory physical exercise.

Considerations like the foregoing have led to an experience on the part of Continental European offices much more favorable than was expected at the beginning of the war. According to advices obtained through correspondence, the death rate of policyholders in German companies was considerably higher during 1914 than in the year preceding the war, although not equal to the tabular expected mortality; while during 1915 the actual mortality to the tabular mortality expected was lower than in 1914. The 50th annual report of the Prussian Life Insurance Company,<sup>9</sup> one of the leading German life offices, is of interest in this respect since it covers seventeen months of actual hostilities. At the outset of the war this company is reported to have had nearly 66,000 policies outstanding (representing \$74,330,000 of insurance) and the vast majority of these policies, we are informed, were on the lives of men within the age limit for military service, the company thus having a very considerable exposure to the war hazard. The average policy for all insurance was, according to the report, about \$1,200, but the average loss per person in military service is reported at only \$577, due mainly to the smaller than average amount of insurance carried by the younger men. Notice should be taken of the fact that the maximum amount of insurance carried by this company on any one life is about \$6,250. During the first seventeen months of war, eight war claims resulted for each 1,000 lives insured. In 1914 the claims incurred from war (\$118,512) amount to 11.6 per cent. of the total claims paid, while the total mortality from all causes, including that incurred from war, equalled 110.6 per cent. of the year's tabular expected mortality. In 1915 the war claims (185,630) represented 16.3 per cent. of the total claims paid, while the total mortality from all causes, including war, amounted to 105 per cent. of the tabular mortality for the year. In all probability the extra charges for, or policy restrictions concerning, the war risk left the company largely unaffected by the increased mortality from war, since we are informed that the company was enabled to continue its long-established dividend of 16 per cent. per annum to its

<sup>9</sup> Summarized in the *Economic World* for July 22, 1916, p. 115.

stockholders, to give to its participating policyholders an amount equal to the distribution of previous years, to set aside a special reserve to meet war claims in 1916, and still to show a surplus of almost \$2,000,000 as compared with reserves of about \$20,000,000.

#### POLICY RESTRICTIONS RELATING TO MILITARY AND NAVAL SERVICE

Space limits make impossible more than a brief outline of the methods adopted by the companies of a few of the leading belligerents in assuming the war risk. Detailed information is at hand as regards the methods adopted at present in Canada, England and France. Concerning Germany, however, the available information as to what is done at present is so scanty as to make any detailed statement impossible. It may be stated at the outset that, at the commencement of hostilities, Canadian and English companies voluntarily waived all war restrictions in policies previously issued, and assumed the war risk without any extra premium charge. On new business, however, restrictions were imposed and an extra premium demanded. The following résumé merely presents the main outlines, so as to show the principal points of similarity and difference:

1. In Canada<sup>10</sup> the companies follow the general plan of permitting service in the militia within Canada, but require notice in case of foreign service. Most of the companies require such annual extra premiums as they may fix; some provide that the premium shall not exceed 15 per cent. per annum of the sum insured; while one company, at least, charges a single extra premium, grading the same according to the amount of insurance, and agreeing to refund, at the close of the war, such portion of the extra premium as the company shall determine in view of its experience. On failure to comply with the terms of the war clause, some companies provide for the return of all premiums paid, with 5 per cent. compound interest if death should occur during service or within a stipulated period thereafter; others return the legal reserve; others agree to pay 25 per cent. of the face of the policy; and at least one company declares the policy to be null and void. A few companies refuse altogether applicants who have enlisted in foreign service or intend to do so. According to Mr. A. B. Wood:

The extra premiums charged range from  $7\frac{1}{2}$  to 15 per cent. per annum of the sum insured.

2. In England<sup>11</sup> the conditions under which the war risk is assumed vary greatly and many companies are declining the risk entirely. When the risk is assumed and the insured engages in war service abroad, without having paid the extra premium, some companies limit the sum payable at death to double the premiums paid during the war and a stipu-

<sup>10</sup> Arthur B. Wood, "The European War Risk with Particular Reference to the Practise and Experience of Canadian Companies," *Transactions of the Actuarial Society of America*, Vol. XVII., Part I., pp. 49-54.

<sup>11</sup> For a fuller account see the *Insurance Record* (London), September 15, 1916, pp. 434-435.

lated number of months thereafter; others return only the premiums paid; and others reduce the sum insured to 10 per cent. (or some other stipulated percentage) during the first year of service, increasing the amount by 10 per cent. (or some other designated percentage) for each succeeding year of service up to the full sum insured. At the termination of the war, the companies usually provide that the policy shall be reinstated to the full sum insured, if satisfactory evidence of health is furnished. If the evidence is not satisfactory, some companies return all the premiums paid; others increase the insurance yearly, according to some plan, up to the full amount; while others call for no evidence of health and will reinstate the policy to its full amount. According to the *Insurance Record*, under date of September 15, 1916, the extra premium at the beginning of hostilities was generally seven guineas per cent. annually; while "subsequently ten, then fifteen guineas were quoted, and to-day the standard rate is nearer twenty guineas." Moreover, we are informed that the offices usually limit their risk to £1,000 or less.

3. French policies, it is stated,<sup>12</sup> usually contain the following military and naval service clause:

The policy shall not be forfeited if the extra premium is not paid; but if the assured die within eight months of the cessation of hostilities, the company will pay to the beneficiaries only the reserve instead of the full face value of the policy.

The eight months' limitation, we are informed, has been reduced to three months at the suggestion of the government. According to the *Post Magazine and Insurance Monitor*, under date of May 27, 1916,

An extra premium of 10 per cent. of the sum assured has been paid by soldiers and reservists of regiments of the line; 7½ per cent. by territorials and their reserves; and 5 per cent. by the non-combatant branches of the army. Originally, these extras were intended to cover one year only, but upon the request of the government the companies agreed to make no additional charge for the second year.

According to the same journal under date of August 19, 1916, the companies decided at the beginning of the third year of war not to ask for a new extra premium. It should be added that the companies decided, at the request of the government, "to proportionately return to policyholders after the war sums received for war risk premiums over and above the total amount of claims caused by the war."<sup>13</sup>

#### AFTER-WAR EFFECTS ON THOSE WHO SERVE

In discussing the war risk, sight should not be lost of the after-war effects on the fifteen or twenty millions who have served in the present war. The importance of this subject can only be inferred at present and certainly will and should be the subject of careful study following the close of hostilities. Many who studied conditions at the front are ap-

<sup>12</sup> John S. Thompson, "Military Service and Its Bearing on the Policy Contract," *Transactions of the Actuarial Society of America*, Vol. XVI, Part II., p. 302.

<sup>13</sup> *Post Magazine and Insurance Monitor*, May 27, 1916, p. 393.

prehensive of the ultimate mortality results. My information is that a large proportion of those serving in the armies has been affected by heart and kidney ailments, trench nephritis, and venereal diseases, and that, judging from the past, these ailments affect the future vitality of the victims. Apprehension is also felt by many concerning the future vitality, especially from the standpoint of tuberculosis, of the three million or more prisoners of war. Badly treated from the standpoint of sanitation, living mostly in idleness, and subjected to an unaccustomed diet, a very large number, it is felt, will leave their prison camps as sub-standard lives.

In conclusion it may be said that the adverse financial and mortality effects of the war, as outlined in the preceding pages, have made serious inroads into the surpluses of practically all companies. What the future holds in store will necessarily depend upon the length of the war. Fortunately, the companies practically everywhere pursued a very conservative policy prior to the outbreak of hostilities. Premiums were computed on the basis of mortality tables which leave a large margin of safety, and on assumed interest rates equal to only about two thirds of the return actually realized in normal times. Had such conservatism not been practised there would in all probability have resulted a large number of failures, and the future would have been dismal indeed. As far as English companies are concerned, anxiety at present is limited chiefly to a consideration of how far dividend distributions to policyholders will be affected. Many have already reduced the same, and some have, as an act of caution, omitted a distribution altogether. Judging from numerous statements made, the hope seems quite general that the adverse financial and mortality results of the war thus far can be made good by the mortality gains of a few subsequent years.

For American companies the experience and practises of foreign companies in relation to the assumption of the war risk has an important bearing. The writer is convinced of the advisability of incorporating a war service clause in future American policies, the same to remain in force during at least the first ten years of the contract. Foreign experience during the present war seems to indicate that, under such a clause, the companies should be given latitude in charging such extra premiums as they may determine necessary. It is also felt that careful consideration should be given to the propositions: (1) of considering the extra premium feature as participating in character with a view to refunding any excess extra premium following the close of hostilities; and (2) of ascertaining the most equitable method of reinstating the policy upon the cessation of hostilities, should the insured, for causes arising from the war, be unable to produce satisfactory evidence of health. The desirability of a careful consideration of the relation which the government should bear equitably to the war risk is also suggested, since the burden to some extent, it is believed, should be borne by the community as a whole.